

IN THE CLAIMS:

Broadens scope of cl. ✓

1. (currently amended) An information recording ~~and reproducing~~ method in which information is recorded by irradiating a recording track on a recording medium with an energy beam and thereby forming recording marks, said recording track being wobbling or deforming with a predetermined period, said information recording ~~and/or reproducing~~ method comprising the steps of:

~~wobbling or deforming said recording track with a predetermined period;~~
generating a recording clock from a signal obtained by detecting the wobble or deformation of said recording track;
~~forming said recording marks in synchronism with said recording clock; and~~
detecting pre-recorded information of control data on said recording medium; and
setting a conversion multiplying factor between a period of the signal obtained by detecting said wobble or deformation and a period of said recording clock, based on said detected pre-recorded information[.]; and
forming said recording marks in synchronism with said recording clock.

2. (currently amended) An information recording ~~and/or reproducing~~ method according to claim 1, further comprising the steps of:

making quantities of user data recorded per single sector equal irrespective of a value of the conversion multiplying factor used when generating said recording clock from said signal obtained by detecting said wobble or deformation; and

making a length of a buffer area preceding a head of a user data portion or a buffer area following a terminus portion of said user data portion longer as the conversion multiplying factor becomes higher.

3. (currently amended) An information recording ~~and/or reproducing~~ method according to claim 2, further comprising the step of keeping a physical length ranging from a head of said buffer area preceding said user data portion to a terminus portion of said buffer area following said user

2) ~~#d~~ channel bits, 1 by varying clock sig

data portion at a nearly same length independently of said conversion multiplying factor by changing the number of channel bits.

4. (currently amended) An information recording ~~and/or reproducing~~ method according to claim 3, further comprising the step of conducting recording over a length of said buffer area

preceding said user data portion and/or a length of said buffer area following said user data portion in a control data zone of said recording medium beforehand.

5. (currently amended) An information recording ~~and reproducing~~ apparatus comprising:

an energy beam generator

a power adjusting mechanism for adjusting a power level of an energy beam generated by said energy beam generator;

a holding mechanism capable of holding a recording medium;

a moving mechanism for irradiating said recording medium with said energy beam and relatively moving said energy beam with respect to said recording medium to thereby form recording marks;

a detector for detecting an energy beam reflected or transmitted in said information recording ~~and reproducing~~ apparatus, a recording track on said recording medium being wobbled or deformed with a predetermined period;

a wobble or deformation detection circuit to detect the wobble or deformation of the recording track based on a detection signal supplied from the energy beam detector;

a recording clock formation circuit to generate a recording clock from a signal obtained by detecting the wobble or deformation, and a power level of the energy beam being changed in synchronism with said recording clock by the power adjusting mechanism; and

a frequency changer circuit to change a conversion multiplying factor between a period of the signal obtained by detecting said wobble or deformation and a period of said recording clock, based on pre-recorded information of control data on the recording medium.

Claims 6-8 (cancelled)

9. (currently amended) An information reproducing method comprising the steps of:

irradiating a recording track on a recording medium with an energy beam;

[detecting an intensity of an energy beam reflected or transmitted by said recording medium, out of said energy beam with which said recording medium is irradiated;] *identity*

reproducing information recorded on said recording medium, from an intensity signal of said reflected or transmitted energy beam, the recording track being wobbling or deforming with a predetermined period;

generating a reproducing clock from a signal obtained by detecting the wobble or deformation of said recording track;

discriminating reproduced data by taking said reproducing clock as a reference;

detecting pre-recorded information of control data on said recording medium; and

setting a conversion multiplying factor between a period of the signal obtained by detecting said wobble or deformation and a period of said reproducing clock, based on said pre-recorded information of control data on said recording medium.

10. (previously presented) An information reproducing apparatus comprising:

add [an energy beam generator;

a power adjusting mechanism for adjusting a power level of an energy beam generated by said energy beam generator;] *10!*

a holding mechanism capable of holding a recording medium;

a moving mechanism for irradiating said recording medium with said energy beam and relatively moving said energy beam with respect to said recording medium;

a detector for detecting an energy beam reflected or transmitted in said recording medium whose recording track is being wobbled or deformed with a predetermined period;

a clock generation circuit to generate a reproducing clock from a signal obtained by detecting the wobble or deformation of the recording track, and reproduced data being discriminated by taking said reproducing clock as a reference; and

a frequency changer circuit to change a conversion multiplying factor between a period of the signal obtained by detecting said wobble or deformation and a period of said reproducing clock, based on pre-recorded information of control data on the recording medium.